

Longer Paroxysmal Postoperative Atrial Fibrillation Correlates with Higher Recurrence of Atrial Fibrillation in Patients with Heart Failure with Reduced Ejection Fraction

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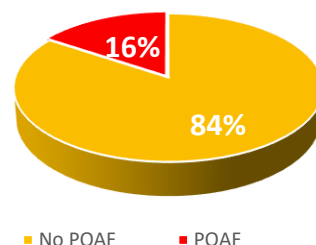
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Background: Postoperative atrial fibrillation (POAF) is a common arrhythmia after cardiac surgery. Heart failure is a known risk factor for developing atrial fibrillation. Little is known about the long-term prognosis and incidence of recurrent atrial fibrillation after cardiac surgery.

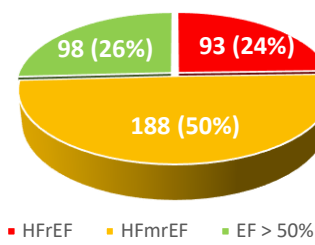
This study aims at examining whether longer postoperative atrial fibrillation correlates with an increased incidence of recurrent atrial fibrillation among patients with heart failure, during the follow-up period.

Methods: From January 2020 to December 2023, a total of 2.419 cardiac surgeries were performed at the Zan Mitrev Clinic, Skopje, R. Macedonia. Echocardiography was performed before the surgery and at every cardiology appointment after discharge (after 1 week, 3 weeks, 2 months, then every 6 months). The POAF was subdivided into two groups, i.e. shorter or longer than 48 hours. All patients were followed-up until December 2024. The data were retrospectively collected from the Hospital Information System. Fisher exact test was used for statistical analyses.

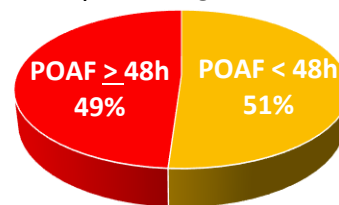
Graph 1: Incidence of POAF after cardiac surgery



Graph 2: Heart Failure distribution among patients with POAF



Graph 3: Length of POAF



Results: A total of 379 patients (16%) had postoperative atrial fibrillation (graph 1). Mean follow up was 22±12 months.

Twenty four percent of the patients had heart failure with a reduced ejection fraction, 188 (50%) had heart failure with a mildly reduced ejection fraction, 26% had an ejection fraction above 50% (graph 2).

Near half of the patients had a shorter or longer POAF (graph 3). Patients with heart failure with a reduced ejection fraction and POAF longer than 48 hours, had a statistically higher incidence of recurrent atrial fibrillation in the follow-up period ($p < 0.028$). There was no statistical difference between the recurrence of atrial fibrillation and the length of POAF in the group of patients with a mildly reduced ejection fraction ($p=0.359$), as well as in the group of patients with normal ejection fraction ($p=0.398$) (table 1).

Table 1. Recurrent POAF between the groups

Recurrent POAF	POAF < 48h	POAF ≥ 48h	
HFrEF (n=93)	4 (4 %)	13 (14 %)	P < 0.028
HFmrEF (n=188)	17 (9%)	21 (11%)	P = 0.359
EF ≥ 50% (n=98)	7 (7%)	8 (8%)	P = 0.398

Conclusion(s): Recurrent atrial fibrillation during the follow-up period occurs more frequently only in the patients with heart failure with reduced ejection fraction and postoperative atrial fibrillation longer than 48 hours.